

Ergo-dynamic Environments Enhance Learning

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TODAY'S TECHNOLOGICAL LIFESTYLE IS DRAMATICALLY AFFECTING OUR CHILDREN'S HEALTH, AS IT SIGNIFICANTLY REDUCES THE TIME THEY SPEND ON PHYSICAL ACTIVITY.

With the hours spent sitting at school, working on computers, playing video games and watching TV, children are spending approximately ten hours a day in sedentary positions and only one hour in physical activity. This is a dramatic decrease on the five or so hours kids spent actively 20 years ago.

Consequently, children are now suffering from medical problems usually associated with the elderly, such as backaches, headaches, neck pain, repetitive strain injuries and obesity. In fact today, 80% of the population suffers temporary back pain.

Sitting 'still' in the classroom also severely limits children's concentration and attention span, says Dr Breithecker, a Sports and physical Scientist from Germany.

"The body is created for movement," said Breithecker, who was in Sydney recently addressing the importance of correct seating for children. "The human body, especially those of growing children, requires a steady flow of blood and the oxygen and nutrients that it brings. Movement is fundamental to this process. Life is movement - movement is life."

"An exclusively static posture can lead to mental and physical impairment due to poor oxygen supply," he said. Sitting not only affects the spine, which is still ossifying in children, but the development of cartilage, bones, ligaments, muscles and organs, including the brain. "Movement supports the quality of development of the brain," he said. "Movement not only comes from the head, it is also good for the head."

Activities such as walking, climbing and balancing, as well as tilting or stretching on a chair, stimulates areas of the brain in a complex manner. This in turn leads to an improvement of the short-term memory (working memory) and learning ability. So rather than telling students to 'sit still', said Breithecker, we should be letting them wiggle, squirm and move, "It will not only benefit their bodies, but their minds."

As there's no ideal long-term sitting position, we need to embrace ergo-dynamics, said Breithecker. "We need ergo-dynamic solutions which accept the body's intrinsic need for movement and variation. Ergonomically designed school furniture can offer significant benefits and contribute to students' learning success." These benefits include support of the biological maturing and development process, prevention of posture problems, and development of a well-balanced mental attitude.

This was illustrated by an experiment Breithecker conducted in 2002 where he surveyed two primary classes, one using a traditional static environment, the other an ergonomically-designed environment. The results showed significantly higher levels of alertness throughout the day in the children working in the ergonomic classroom.

Breithecker said schools should invest in furniture that accommodates growing students' instinctive need for movement. "School furniture should suit the children - not the other way around."

Conventional school chairs have a rigid seat that inclines backwards, holding the bottom in the hollow and cramping the solar plexus. This results in flat breathing and inadequate blood circulation, leading to a decrease in concentration.

Breithecker recommends desks and chairs that work together to adapt to the child's height, conform to their autonomous need for movement and accommodate the various activities in the classroom. He also suggests teachers allow for variety in their students' working positions, including 'dynamic sitting', standing and lying on the floor, as well as incorporating more physical activity into their schedule.

Making children aware of ergo-dynamics is also important, as sedentary activity tends to increase once they enter the work force. As Breithecker said, "Educating our children about postural awareness, ergonomic work stations and backpack safety are just as important as nutrition, exercise and personal safety." ❖

"Movement supports the quality of the development of the brain" says Dr Dieter Breithecker and says children need to be able to move and not be static, at his recent address in Sydney.

